WHAT IS CLAIMED IS:

1. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 7 to 74 amino acids containing a 7 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7, wherein aa_1 is the amino-terminus of the core sequence; one of aa_6 and aa_7 is selected from the group consisting of phenylalanine, tryptophan and tyrosine, such that when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine, arginine and histidine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine; and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

2. The antimicrobial peptide composition of Claim 1, wherein aa_1 is selected from the group consisting of alanine, lysine and glycine; aa_2 is selected from the group consisting of leucine and arginine; aa_3 is tyrosine; and aa_4 and aa_5 are selected from the group consisting of lysine, arginine, and histidine.

3. The antimicrobial peptide composition of Claim 1, wherein aa_4 and aa_5 are selected from the group consisting of lysine and arginine.

4. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 7 to 74 amino acids containing a 7 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7, wherein aa_1 is the amino-terminus of the peptide; aa_6 is selected from the group consisting of phenylalanine and tryptophan and tyrosine; and aa_7 is selected from the group consisting of lysine and arginine; and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

5. The antimicrobial peptide composition of Claim 4, wherein when aa_6 is selected from the group consisting of phenylalanine and tryptophan, and aa_7 is selected from the group consisting of lysine and arginine.

6. The antimicrobial peptide composition of Claim 5, wherein aa_1 is selected from the group consisting of alanine, lysine and glycine; aa_2 is selected from the group consisting of leucine and arginine; aa_3 is tyrosine; and aa_4 and aa_5 are selected from the group consisting of lysine, arginine, glutamine, proline, histidine and asparagine.

7. The antimicrobial peptide composition of Claim 6, wherein aa_4 and aa_5 are selected from the group consisting of lysine and arginine.

8. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 13 to 18 amino acids containing a 12 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}, wherein aa_1 is the amino-terminus of the peptide and is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, lysine and glycine; aa_2 is selected from the group consisting of leucine, isoleucine, alanine, valine, serine and arginine; aa_3 is selected from the group consisting of phenylalanine, tryptophan and tyrosine; aa_4 and aa_5 are selected from the group consisting of lysine, arginine and histidine; one of aa_6 and aa_7 is selected from the group consisting of phenylalanine, tryptophan and tyrosine, such that when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine, arginine and histidine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine; aa_8 is selected from the group consisting of lysine, arginine, histidine and asparagine; aa_9 is selected from the group consisting of lysine, arginine and histidine; aa_{10} is selected from the group consisting of leucine, isoleucine, alanine, valine and serine; aa_{11} is selected from the group consisting of leucine, isoleucine, alanine, valine, serine and lysine; and aa_{12} is selected from the group consisting of lysine, arginine and histidine; and retromers,

truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

9. The antimicrobial peptide composition of Claim 8, wherein aa_1 is selected from the group consisting of alanine, lysine and glycine; aa_2 is selected from the group consisting of leucine and arginine; aa_3 is tyrosine; aa_4 and aa_5 are selected from the group consisting of lysine and arginine; aa_8 is selected from the group consisting of lysine and asparagine; aa_9 is lysine; aa_{10} is selected from the group consisting of leucine and isoleucine; aa_{11} is selected from the group consisting of leucine and lysine; and aa_{12} is selected from the group consisting of lysine and arginine.

10. The antimicrobial peptide composition of Claim 8, wherein one of aa_6 and aa_7 is selected from the group consisting of phenylalanine and tryptophan, such that when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine and arginine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine.

11. The antimicrobial peptide composition of Claim 8, wherein aa_1 is selected from the group consisting of alanine, lysine and glycine; aa_2 is selected from the group consisting of leucine and arginine; aa_3 is tyrosine; aa_6 is selected from the group consisting of phenylalanine, tryptophan and tyrosine; aa_7 is selected from the group consisting of lysine and arginine; aa_8 is selected from the group consisting of lysine and asparagine; aa_9 is lysine; aa_{10} is selected from the group consisting of leucine and isoleucine; aa_{11} is selected from the group consisting of leucine and lysine; and aa_{12} is selected from the group consisting of lysine and arginine.

12. The antimicrobial peptide composition of Claim 11, wherein when aa_6 is phenylalanine aa_7 is lysine or arginine, and when aa_6 is tryptophan aa_7 is lysine.

13. The antimicrobial peptide composition of Claim 8, wherein aa_6 is selected from the group consisting of phenylalanine, tryptophan and tyrosine; and aa_7 is selected from the group consisting of lysine and arginine.

14. The antimicrobial peptide composition of Claim 13, wherein when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine and arginine, and when aa_6 is tryptophan aa_7 is lysine.

15. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 13 to 18 amino acids containing a 13 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}, wherein aa_1 is the amino-terminus of the peptide and is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, lysine and glycine; aa_2 is selected from the group consisting of leucine, isoleucine, alanine, valine, serine and arginine; aa_3 is selected from the group consisting of phenylalanine, tryptophan, tyrosine; aa_4 and aa_5 are selected from the group consisting of lysine, arginine and histidine; one of aa_6 and aa_7 is selected from the group consisting of phenylalanine, tryptophan, tyrosine, and the other of aa_6 and aa_7 is selected from the group consisting of lysine, arginine and leucine, wherein when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine and arginine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine; aa_8 is selected from the group consisting of lysine, arginine, histidine and asparagine; aa_9 is selected from the group consisting of lysine, arginine and histidine; aa_{10} is selected from the group consisting of leucine, isoleucine, alanine, valine and serine; aa_{11} is selected from the group consisting of leucine, isoleucine, alanine, valine, serine and lysine; and aa_{12} is selected from the group consisting of lysine, arginine and histidine; and aa_{13} is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, arginine and phenylalanine; and retromers, truncations, extensions, combinations, fusions, and D-isomeric amino acid, retromeric, N-

monomethyl-lysine, and fluorinated amino acid derivatives thereof, said peptide having antimicrobial activity.

16. The antimicrobial peptide composition of Claim 15, wherein aa_1 is selected from the group consisting of alanine, lysine and glycine; aa_2 is selected from the group consisting of leucine and arginine; aa_3 is tyrosine; aa_4 and aa_5 are selected from the group consisting of lysine, arginine and histidine; aa_8 is selected from the group consisting of lysine and asparagine; aa_9 is lysine; aa_{10} is selected from the group consisting of leucine and isoleucine; aa_{11} is selected from the group consisting of leucine and lysine; and aa_{12} is selected from the group consisting of lysine and arginine.

17. The antimicrobial peptide composition of Claim 16, wherein aa_{13} is selected from the group consisting of serine, leucine, arginine and phenylalanine.

18. An antimicrobial peptide composition for direct activity or for potentiating antimicrobial agents active against organisms such as bacteria and fungi, comprising:

a peptide of from 13 to 74 containing an amino acid core sequence selected from the group consisting of truncations of PMP-1 (Sequence No. 2), and retromers, extensions, combinations and fusions thereof; truncations of PMP-2 (Sequence No. 1), and retromers, extensions, combinations and fusions thereof.

19. The antimicrobial peptide composition of Claim 18, further comprising a pharmaceutically acceptable carrier.

20. The antimicrobial peptide composition of Claim 18, wherein said peptide is a truncation of PMP-2 (Sequence No. 1) and comprises residues 28 to 74 of PMP-2 (Sequence No. 1).

21. The antimicrobial peptide composition of Claim 18, wherein said peptide is a truncation of PMP-2 (Sequence No. 1) and comprises residues 43 to 74 of PMP-2 (Sequence No. 1).

22. The antimicrobial peptide composition of Claim 18, wherein said peptide is a truncation of PMP-2 (Sequence No. 1) and comprises residues 59 to 74 of PMP-2 (Sequence No. 1).

23. The antimicrobial peptide composition of Claim 18, wherein said peptide is a truncation of PMP-2 (Sequence No. 1) and comprises residues 45 to 74 of PMP-2 (Sequence No. 1).

24. The antimicrobial peptide composition of Claim 18, wherein said peptide comprises an extension of RP-1 (Sequence No. 3) by RP-1 residues 1-10.

25. The antimicrobial peptide composition of Claim 18, wherein said peptide comprises a combination of RP-1 (Sequence No. 3) with RP-13 (Sequence No. 14).

26. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 8 to 20 amino acids containing an amino acid core sequence of a first amino acid sequence domain, a second amino acid sequence domain, and a third amino acid sequence domain, where said first amino acid sequence domain is a sequence of from one to six amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and threonine; said second amino acid sequence domain is a sequence of from one to two amino acids selected from the group consisting of lysine, arginine, histidine, glutamine, proline, glutamic acid, aspartic acid and glycine; said third amino acid sequence domain is a sequence of from one to nine amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and

threonine; and where the amino acids within said first, second and third amino acid sequence domains may be separated, and said first, second and third amino acid domains may be separated from each other by up to three amino acids selected from the group consisting of asparagine, cystine, aspartic acid, glutamic acid and methionine; and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

27. The antimicrobial peptide composition of Claim 26, wherein said peptide contains an amino acid core sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}, wherein aa_1 is the amino-terminus of the peptide and is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and threonine; aa_2 is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and threonine; aa_3 and aa_4 are selected from the group consisting of lysine, arginine, histidine, glutamine, and proline; aa_5 is selected from the group consisting of asparagine, cystine, aspartic acid, glutamic acid and methionine; aa_6 is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and threonine; aa_7 is selected from the group consisting of lysine, arginine, histidine, glutamine, proline, glutamic acid, aspartic acid and glycine; aa_8 is selected from the group consisting of lysine, arginine, histidine, glutamine, proline and glutamic acid; aa_9, aa_{11}, aa_{13}, aa_{15}, aa_{16}, and aa_{17} are selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, and threonine; aa_{10} and aa_{12} are selected from the group consisting of asparagine, cystine, aspartic acid, glutamic acid and methionine; and aa_{14} is selected from the group consisting of lysine, arginine, histidine, glutamine and proline.

28. The antimicrobial peptide composition of Claim 26, wherein said peptide contains an amino acid core sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}, wherein aa_1 is the amino-terminus of the peptide core sequence and is alanine; aa_2 is threonine; aa_3 and aa_4 are lysine; aa_5 is asparagine; aa_6 is

glycine; aa_7 is arginine; aa_8 is lysine; aa_9, aa_{11}, aa_{13} and aa_{17} are leucine; aa_{10} is cystine; aa_{12} is aspartic acid; aa_{14} is glutamine; and aa_{15} and aa_{16} are alanine.

29. The antimicrobial peptide composition of Claim 26, wherein said peptide contains an amino acid core sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8, wherein aa_1 is the amino-terminus of the peptide core sequence and is arginine; aa_2 is phenylalanine; aa_3 is glutamic acid; aa_4 is lysine; aa_5 is serine; aa_6 is lysine; aa_7 is isoleucine; and aa_8 is lysine.

30. The antimicrobial peptide composition of Claim 26, wherein said peptide contains an amino acid core sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}-aa_{18}-aa_{19}-aa_{20}, wherein aa_1 is the amino-terminus of the peptide and is serine; aa_2 is alanine; aa_3 is isoleucine; aa_4 is histidine; aa_5 is proline; aa_6 and aa_7 are serine; aa_8 is isoleucine; aa_9 is leucine; aa_{10} is lysine; aa_{11} is leucine; aa_{12} is glutamic acid; aa_{13} is valine; aa_{14} is isoleucine; aa_{15} is cystine; aa_{16} is isoleucine; aa_{17} is glycine; aa_{18} is valine; aa_{19} is leucine; and aa_{20} is glutamine.

31. The antimicrobial peptide composition of Claim 26, wherein said peptide contains an amino acid core sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}, wherein aa_1 is the amino-terminus of the peptide and is tyrosine; aa_2 is alanine; aa_3 is selected from the group consisting of aspartic acid and glutamic acid; aa_4 and aa_5 are selected from the group consisting of leucine, arginine and histidine; aa_6 is cystine; aa_7 is selected from the group consisting of threonine or valine; aa_8 is cystine; aa_9 is serine; aa_{10} is isoleucine; aa_{11} is lysine; aa_{12} is alanine; aa_{13} is glutamic acid; and aa_{14} is valine.

32. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 5 to 150 amino acids containing an amino acid core sequence of a first amino acid sequence domain, a second amino acid sequence domain, a third amino acid sequence domain, and a fourth amino acid sequence domain, and wherein said first amino acid sequence domain is at the amino-terminus of the amino acid core sequence and is a sequence of from one to five amino acids selected from the group consisting of phenylalanine, tryptophan, tyrosine, where amino acids of said first amino acid sequence domain may be separated from each other by an amino acid selected from the group consisting of leucine, isoleucine, alanine, valine and serine; said second amino acid sequence domain is an amino acid selected from the group consisting of lysine, arginine, histidine, glutamine, and proline; said third amino acid sequence domain is a sequence of from one to five amino acids selected from the group consisting of phenylalanine, tryptophan, tyrosine; and said fourth amino acid sequence domain is an amino acid selected from the group consisting of lysine, arginine, histidine, glutamine, and proline; and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

33. The antimicrobial peptide composition of Claim 32, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}, wherein aa_1 is the amino-terminus of the peptide and is lysine; aa_2 is phenylalanine; aa_3 is lysine; aa_4 is histidine; aa_5 is tyrosine; aa_6 and aa_7 are phenylalanine; aa_8 is tryptophan; aa_9 is lysine; aa_{10} is tyrosine; and aa_{11} is lysine.

34. The antimicrobial peptide composition of Claim 32, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}, wherein aa_1 is the amino-terminus of the peptide and is lysine; aa_2 is glycine; aa_3 is tyrosine; aa_4 is phenylalanine; aa_5 is tyrosine; aa_6 is phenylalanine; aa_7 is leucine; aa_8 is phenylalanine; aa_9 is lysine; aa_{10} is phenylalanine; and aa_{11} is lysine.

Sub B5

35. The antimicrobial peptide composition of Claim 32, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}, wherein aa_1 is the amino-terminus of the peptide and is lysine; aa_2 is tryptophan; aa_3 is lysine; aa_4, aa_5, aa_6, aa_7 and aa_8 are tryptophan; aa_9 is lysine; aa_{10} is tryptophan; and aa_{11} is lysine.

36. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 11 to 20 amino acids containing from one to four units of an amino acid core sequence domain, wherein adjacent units of said amino acid core sequence domain may be separated from each other by from one to two amino acids selected from the group consisting of phenylalanine, tryptophan, tyrosine, asparagine, cystine, aspartic acid, glutamic acid and methionine; wherein said amino acid sequence domain consists of a first group of amino acids and a second group of amino acids, said first group of amino acids consisting of from one to six amino acids selected from the group of leucine, isoleucine, alanine, valine, serine, glycine, and threonine, and said second group of amino acids consisting of from one to three amino acids selected from the group of lysine, arginine, histidine, glutamine, and proline; wherein said the amino acids in said first and second groups of amino acids may be separated by from one to two amino acids selected from the group consisting of phenylalanine, tryptophan, tyrosine, asparagine, cystine, aspartic acid, glutamic acid and methionine; and wherein said first and second groups of amino acids may be separated from each other by an amino acid selected from the group consisting of phenylalanine, tryptophan and tyrosine; and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

37. The antimicrobial peptide composition of Claim 36, wherein said peptide contains two of said units of said amino acid core sequence domain.

38. The antimicrobial peptide composition of Claim 37, wherein said two units of said amino acid core sequence domain are separated by an amino acid selected from the group consisting of asparagine, cystine, aspartic acid, glutamic acid and methionine, and an amino acid selected from the group consisting of phenylalanine, tryptophan and tyrosine.

39. The antimicrobial peptide composition of Claim 37, wherein said two units of said amino acid core sequence domain are separated by an amino acid selected from the group consisting of phenylalanine, tryptophan and tyrosine.

40. The antimicrobial peptide composition of Claim 36, wherein said peptide contains three of said units of said amino acid core sequence domain.

41. The antimicrobial peptide composition of Claim 37, wherein the first and second units of said amino acid core sequence domain are separated by an amino acid selected from the group consisting of phenylalanine, tryptophan and tyrosine.

42. The antimicrobial peptide composition of Claim 36, wherein said peptide contains four of said units of said amino acid core sequence domain.

43. The antimicrobial peptide composition of Claim 42, wherein the first and second units of said amino acid core sequence domain are separated by an amino acid selected from the group consisting of phenylalanine, tryptophan and tyrosine.

Sub B6

44. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}, wherein aa_1 is the amino-terminus of the peptide and is proline, aa_2 is arginine, aa_3 is isoleucine, aa_4 and aa_5 are lysine, aa_6 is isoleucine, aa_7 is valine, aa_8 is glutamine, aa_9 and aa_{10} are lysine, aa_{11} is leucine, aa_{12} is alanine, and aa_{13} is glycine.

45. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}-aa_{18}-aa_{19}, wherein aa_1 is the amino-terminus of the peptide and is lysine, aa_2 is tryptophan, aa_3 is valine, aa_4 is arginine, aa_5 is glutamic acid, aa_6 is tryosine, aa_7 is isoleucine, aa_8 is asparagine, aa_9 is serine, aa_{10} is leucine, aa_{11} is glutamic acid, aa_{12} is methionine, aa_{13} is serine, aa_{14} and aa_{15} are lysine, aa_{16} is glycine, aa_{17} is leucine, aa_{18} is alanine, and aa_{19} is glycine.

46. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}-aa_{18}-aa_{19}-aa_{20}, wherein aa_1 is the amino-terminus of the peptide and is glutamic acid, aa_2 is tryptophan, aa_3 is valine, aa_4 is glutamine, aa_5 is lysine, aa_6 is tryosine, aa_7 is valine, aa_8 is serine, aa_9 is asparagine, aa_{10} is leucine, aa_{11} is glutamic acid, aa_{12} is leucine, aa_{13} is serine, aa_{14} is alanine, aa_{15} is tryptophan, aa_{16} and aa_{17} are lysine, aa_{18} is isoleucine, aa_{19} is leucine, and aa_{20} is lysine.

47. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}, wherein aa_1 is the amino-terminus of the peptide and is serine, aa_2 is tryptophan, aa_3 is valine, aa_4 is glutamine, aa_5 is glutamic acid, aa_6 is tryosine, aa_7 is valine, aa_8 is tryosine, aa_9 is asparagine, aa_{10} is leucine, aa_{11} is glutamic acid, and aa_{12} is leucine.

48. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}, wherein aa_1 is the amino-terminus of the peptide and is alanine, aa_2 is asparagine, aa_3 is serine, aa_4 is glycine, aa_5 is glutamic acid, aa_6 is glycine, aa_7 is asparagine, aa_8 is phenylalanine, aa_9 is leucine, aa_{10} is alanine, aa_{11} is glutamic acid, aa_{12}, aa_{13} and aa_{14} are glycine, aa_{15} is valine, and aa_{16} is arginine.

49. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}-aa_{18}-aa_{19}-aa_{20}, wherein aa_1 is the amino-terminus of the peptide and is alanine, aa_2 is asparagine, aa_3 is serine, aa_4 is glycine, aa_5 is glutamic acid, aa_6 is glycine, aa_7 is asparagine, aa_8 is phenylalanine, aa_9 is leucine, aa_{10} is alanine, aa_{11} is glutamic acid, aa_{12}, aa_{13} and aa_{14} are glycine, aa_{15} is valine, aa_{16} is arginine, aa_{17} is lysine, aa_{18} is leucine, aa_{19} is isoleucine, and aa_{20} is lysine.

50. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}, wherein aa_1 is the amino-terminus of the peptide and is glutamic acid, aa_2 is glycine, aa_3 is valine, aa_4 is asparagine, aa_5 is aspartic acid, aa_6 is asparagine, aa_7 and aa_8 are glutamic acid, aa_9 is glycine, aa_{10} and aa_{11} are phenylalanine, aa_{12} is serine, and aa_{13} is alanine.

51. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-aa_{17}-aa_{18}, wherein aa_1 is the amino-terminus of the peptide and is lysine, aa_2 is phenylalanine, aa_3 is asparagine, aa_4 is lysine, aa_5 is serine, aa_6 is lysine, aa_7 is leucine, aa_8 and aa_9 are lysine, aa_{10} is threonine, aa_{11} is glutamic acid, aa_{12} is threonine, aa_{13} is glutamine, aa_{14} is glutamic acid, aa_{15} is lysine, aa_{16} is asparagine, aa_{17} is proline, and aa_{18} is leucine.

52. The antimicrobial peptide composition of Claim 36, wherein said peptide contains the amino acid sequence aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}, wherein aa_1 is the amino-terminus of the peptide and is alanine, aa_2 is asparagine, aa_3 is leucine, aa_4 is isoleucine, aa_5 is alanine, aa_6 is threonine, aa_7 and aa_8 are lysine, aa_9 is asparagine, aa_{10} is glycine, aa_{11} is arginine, aa_{12} is lysine, aa_{13} is leucine, aa_{14} is cystine, and aa_{15} is leucine.

53. An antimicrobial peptide for potentiating antimicrobial activity of leukocytes against organisms such as bacteria and fungi, and for activity against organisms such as bacteria and fungi , comprising:

a peptide of from 5 to 150 amino acids having a three amino acid core sequence of a first amino acid which is cystine, a second amino acid which is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine, and a third amino acid which is cystine.

54. An antimicrobial peptide for potentiating antimicrobial activity of leukocytes against organisms such as bacteria and fungi, and for activity against organisms such as bacteria and fungi , comprising:

a peptide of from 5 to 150 amino acids having an amino acid core sequence of a first amino acid sequence domain, a second amino acid sequence domain, and a third amino acid sequence domain, wherein said first amino acid sequence domain is a sequence of three amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine; said second amino acid sequence is a first amino acid which is cystine, a second amino acid which is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine, and a third amino acid which is cystine; and said third amino acid sequence is a sequence of six amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine.

55. An antimicrobial peptide for potentiating antimicrobial activity of leukocytes against organisms such as bacteria and fungi, and for activity against organisms such as bacteria and fungi , comprising:

a peptide of from 5 to 150 amino acids having an amino acid core sequence of a first amino acid sequence domain, a second amino acid sequence domain, a third amino acid sequence domain, and a fourth amino acid sequence domain, wherein said first amino acid sequence domain is a sequence of from 13 to 18 amino acids containing a 12 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}, wherein aa_1 is the amino-terminus of the peptide, one of aa_6 and aa_7 is selected from the group consisting of phenylalanine and tryptophan, such that when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine and arginine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine; said second amino acid sequence domain is a sequence of three amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine; said third amino acid sequence domain is a first amino acid which is cystine, a second amino acid which is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine, and a third amino acid which is cystine; and said fourth amino acid sequence domain is a sequence of six amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine.

56. An antimicrobial peptide for potentiating antimicrobial activity of leukocytes against organisms such as bacteria and fungi, and for activity against organisms such as bacteria and fungi , comprising:

a peptide of from 5 to 150 amino acids having an amino acid core sequence of a first amino acid sequence domain, a second amino acid sequence domain, a third amino acid sequence domain, and a fourth amino acid sequence domain, wherein said first

amino acid sequence domain is a sequence of three amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine; said second amino acid sequence is a first amino acid which is cystine, a second amino acid which is selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine, and a third amino acid which is cystine; said third amino acid sequence is a sequence of six amino acids selected from the group consisting of leucine, isoleucine, alanine, valine, serine, glycine, threonine, phenylalanine, tryptophan, tyrosine, lysine, arginine, glutamine, proline, and histidine; and said fourth amino acid sequence domain is a sequence of from 13 to 18 amino acids containing a 12 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}-aa_{12}, wherein aa_1 is the amino-terminus of the peptide, one of aa_6 and aa_7 is selected from the group consisting of phenylalanine and tryptophan, such that when aa_6 is phenylalanine aa_7 is selected from the group consisting of lysine and arginine, when aa_6 is tryptophan aa_7 is lysine, and when aa_7 is phenylalanine aa_6 is leucine, and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

57. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 11 to 22 amino acids containing an 10 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}, wherein aa_1 is the amino-terminus of the amino acid core sequence and is threonine; aa_2 and aa_3 are selected from the group consisting of lysine and arginine; aa_4 is asparagine; aa_5 is glycine; aa_6 is selected from the group consisting of lysine, arginine, glutamic acid and glycine; aa_7 is selected from the group consisting of lysine, arginine and glutamic acid; aa_8 is leucine; aa_9 is cystine; and aa_{10} is leucine, and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

58. The antimicrobial peptide composition of Claim 57, wherein said amino acid core sequence further contains the amino acid sequence aa_{11}-aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}, and wherein aa_{11} is selected from the group consisting of aspartic acid, glutamic acid, lysine, and glycine; aa_{12} is leucine; aa_{13} is glutamine; aa_{14} and aa_{15} are alanine; and aa_{16} is leucine.

59. The antimicrobial peptide composition of Claim 58, wherein said amino acid core sequence further contains the amino acid sequence aa_{17}-aa_{18}-aa_{19}, and wherein aa_{17} is selected from the group consisting of tyrosine, phenylalanine and tryptophan; and aa_{18} and aa_{19} are selected from the group consisting of lysine, arginine, and glutamic acid.

60. The antimicrobial peptide composition of Claim 59, wherein said amino acid core sequence further contains the amino acid aa_{20} selected from the group consisting of lysine, arginine, and glutamic acid.

61. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide of from 11 to 22 amino acids containing an 11 amino acid core sequence: aa_1-aa_2-aa_3-aa_4-aa_5-aa_6-aa_7-aa_8-aa_9-aa_{10}-aa_{11}, wherein aa_1 is the amino-terminus of the amino acid core sequence and is alanine; aa_2 is threonine; aa_3 and aa_4 are selected from the group consisting of lysine and arginine; aa_5 is asparagine; aa_6 is glycine; aa_7 is selected from the group consisting of lysine, arginine, glutamic acid and glycine; aa_8 is selected from the group consisting of lysine, arginine and glutamic acid; aa_9 is leucine; aa_{10} is cystine; and aa_{11} is leucine, and retromers, truncations, extensions, combinations, fusions, and derivatives thereof, said peptide having antimicrobial activity.

62. The antimicrobial peptide composition of Claim 61, wherein said amino acid core sequence further contains the amino acid sequence aa_{12}-aa_{13}-aa_{14}-aa_{15}-aa_{16}-

aa_{17}, and wherein aa_{12} is selected from the group consisting of aspartic acid, glutamic acid, lysine, and glycine; aa_{13} is leucine; aa_{14} is glutamine; aa_{15} and aa_{16} are alanine; and aa_{17} is leucine.

63. The antimicrobial peptide composition of Claim 62, wherein said amino acid core sequence further contains the amino acid sequence aa_{18}-aa_{19}-aa_{20}, and wherein aa_{18} is selected from the group consisting of tyrosine, phenylalanine and tryptophan; and aa_{19} and aa_{20} are selected from the group consisting of lysine, arginine, and glutamic acid.

64. The antimicrobial peptide composition of Claim 63, wherein said amino acid core sequence further contains the amino acid aa_{21} selected from the group consisting of lysine, arginine, and glutamic acid.

65. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide consisting of PMP-1 (Sequence No. 2), and truncations, retromers, extensions, combinations and fusions thereof, and D-isomeric amino acid, retromeric, N-monomethyl-lysine, and fluorinated amino acid derivatives thereof, said peptide having antimicrobial activity.

66. An antimicrobial peptide composition for use against organisms such as bacteria and fungi, comprising:

a peptide consisting of PMP-2 (Sequence No. 1), and truncations, retromers, extensions, combinations and fusions thereof, and D-isomeric amino acid, retromeric, N-monomethyl-lysine, and fluorinated amino acid derivatives thereof, said peptide having antimicrobial activity.